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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,778	08/08/2001	Michael L. Boroson	83120RLO	4335

7590 11/06/2003
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EXAMINER

LAWRENCE JR, FRANK M

ART UNIT PAPER NUMBER

1724

DATE MAILED: 11/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)	
09/924,778	BOROSON ET AL.	
Examiner	Art Unit	
Frank M. Lawrence	1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 and 31-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-24 is/are allowed.
- 6) ☒ Claim(s) 25, 26, 28, 29, 31-33 and 35 is/are rejected.
- 7) ☒ Claim(s) 27 and 34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 25 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Shtarkman (4,992,190).

3. Shtarkman ('190) teaches an ultrafine silica gel powder having an average particle size between about 0.1 microns and about 0.01 microns, and that such materials have found frequent use as desiccants (col. 3, lines 48-67). The desiccant is capable of maintaining a moisture absorption rate and providing a decreased humidity level of less than 100 ppm when the starting humidity level is near or less than 100 ppm.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 25, 26, 28, 29, 31, 32 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belding et al. ('897) in view of Shtarkman ('190).

6. Belding et al. ('897) disclose a desiccant package comprising a desiccant paper made up of a desiccant, fibers, and a binder for retention of the desiccant on and within the fiber shafts in

Art Unit: 1724

a paper matrix. The desiccant can include a zeolite, silica gel, or halogen salts having a particle size ranging from 0.1 to 50 microns. The fibers and binder form an adhesive for supporting the desiccant in a moisture-permeable container as defined by the instant specification, and will enhance the absorption rate by holding a higher level of desiccant. The fiber can be a cellulose acetate and the desiccant can comprise 5-70 wt. % of the article with the remainder being fibers and binder (see col. 4, lines 26-36; col. 5, lines 36-41; col. 7, lines 26-34; claim 17). The container is capable of being placed in a sealed enclosure as recited in the claims and the water vapor transmission rate of the binder and fibers will inherently be greater than the rate recited in the instant claims because a porous paper is formed. The desiccant is capable of maintaining a moisture absorption rate and providing a decreased humidity level of less than 100 ppm when the starting humidity level is near or less than 100 ppm. The instant claims differ from the disclosure of Belding et al. ('897) in that the average particle size of the desiccant is 0.001 to less than 0.1 microns.

7. Shtarkman ('190) discloses a silica gel desiccant as described in paragraph 4 above. It would have been obvious to one having ordinary skill in the art at the time of the invention to substitute the desiccant of Shtarkman for the desiccant in Belding et al. in order to provide a larger porous surface area per desiccant volume that can absorb large amounts of liquid or vapor.

8. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Belding et al. ('897) in view of Shtarkman ('190) as applied to claim 26 above, and further in view of Levinson et al. (5,384,357).

9. Belding et al. ('897) in view of Shtarkman ('190) disclose all of the limitations of the claims except that the binder is radiation curable. Levinson et al. ('357) disclose radiation

curable silicone binders that can be used as a binder for a desiccant such as a zeolite (see abstract; col. 2, lines 49-56). It would have been obvious to one having ordinary skill in the art at the time of the invention to use a radiation curable binder in the desiccant structure of the prior art in order to provide a binder that allows accelerated manufacturing by speeding up the binding process.

Allowable Subject Matter

10. Claims 1-24 are allowed.
11. Claims 27 and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
12. The following is a statement of reasons for the indication of allowable subject matter: reasons for indicating allowable subject matter are given in the previous office action (paper no. 10).

Response to Arguments

13. Applicant's arguments filed September 22, 2003 have been fully considered but they are not persuasive. Applicant argues that the silica gel dispersant of Shtarkman does not anticipate the desiccant of the instant claims because there is no mention of the relationship between particle size and the ability to reduce moisture content, or that the silica gel is capable of providing a decreased humidity level of less than 100 ppm. It is submitted that a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Art Unit: 1724

In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). There is no recited structural difference between the ultra-fine desiccant of the claims and the ultra-fine silica gel dispersant that can be used as a desiccant of the prior art. The prior art composition is also inherently capable of maintaining any specified humidity level, particularly in the case where the starting humidity level is near or below that of the specified level.

14. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, motivation to use a smaller desiccant particle size is knowledge generally available to one of ordinary skill in the art. In applications requiring contact of a fluid with a solid particle, a greater contact effect can be achieved where particle size is smaller, because of the increased overall surface area made available for contact. The only case where a large particle size is desired is when a resulting pressure drop of fluid through the contact particles due to resistance would be unacceptable. The particles of Belding et al. are disclosed as having a size down to 0.1 microns, while the instant claims disclose a size of less than 0.1 microns. As discussed above, it would have been obvious to one skilled in the art to use a smaller desiccant

Art Unit: 1724

particle if available to increase the rate of moisture sorption. Applicants arguments with respect to the other reference rely on the arguments addressed above.

Conclusion

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank M. Lawrence whose telephone number is 703-305-0585. The examiner can normally be reached on Mon-Thurs 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on 703-308-1261. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

Frank M. Lawrence

Application/Control Number: 09/924,778

Page 7

Art Unit: 1724

Primary Examiner
Art Unit 1724

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Frank Lawrence

11-5-03